

Summary of Cancer Incidence and Mortality for Spartanburg County, SC

Cancer Incidence in Spartanburg County

The first step in the analysis of cancer data for this county was to look at the number of new cancer cases diagnosed in the county and compare this to the number of cancer cases expected in this county (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of each county.

Table 1 shows what types of cancer were diagnosed in Spartanburg County from 1996-2000, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected in Spartanburg County. The most common types of cancer in this county were lung, female breast, prostate and colon/rectum cancers. These types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis revealed no specific types of cancer where the number of cases was significantly higher than expected.

Cancer Deaths in Spartanburg County

To assess cancer deaths in Spartanburg County, cancer mortality data from 1998-2002 were used. The process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred in Spartanburg County and the number expected. Overall, the number of cancer deaths that occurred was significantly higher than expected in Spartanburg County; however clusters generally occur among one specific type of cancer instead of all different types of cancer combined.

The analysis revealed several specific types of cancer (**Lung/Bronchus, Female Breast, Unknown Ill-defined and Liver**) where the number of deaths was significantly higher than expected.

Smoking is the most important risk factor for lung cancer. More than 80% of lung cancers are thought to result from smoking. Research has shown that there are several factors that put a woman at increased risk for breast cancer.

These risk factors include increasing age, a family history of breast cancer, prior history of breast cancer or benign breast disease, early age at onset of menstruation, late age at menopause, and late age at first pregnancy or not having children. Also, about 1 in 10 breast cancers are linked to changes in certain genes. Inheriting a mutated gene from either parent means a woman is more likely to develop breast cancer.

The use of alcohol and being overweight are clearly linked to a higher risk of breast cancer. However, other areas are not as clear as to their effects on breast cancer risk. For example, a recent study found that the use of birth control pills slightly increased the risk of breast cancer. However, women who stopped using the pill more than ten years ago do not seem to have an increased risk. Also, most studies suggest that long-term use (5 or more years) of Hormone Replacement Therapy (HRT) may slightly increase the risk of breast cancer.

There are several risk factors that increase a person's risk for developing liver cancer. These risk factors include chronic infection with Hepatitis B or C or having cirrhosis. Also, occupational exposure to vinyl chloride has been shown to increase liver cancer risk.

The unknown/ill defined cancer site is used to describe cancer deaths with an unclear description at diagnosis of the cancer's location in the body. Therefore, there are no risk factors for these sites due to the fact the origin of the cancer could not be determined by the physician.

Conclusions

To summarize, overall there were fewer cases of cancer occurring in Spartanburg County than expected. There were no specific types of cancer with a significantly higher number of cancer cases than expected in Spartanburg County. Overall, there was a significantly higher number of cancer deaths in Spartanburg County than expected. There was a statistically higher number of lung cancer deaths than expected, however since the main risk factor for lung cancer is lifestyle related, i.e. smoking, a cancer cluster is not likely.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer

types of cancer rather than more common cancers like lung or prostate cancers. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, the South Carolina Central Cancer Registry determined there is no evidence of cancer clustering in Spartanburg County.

For questions about this report, please contact Susan Bolick-Aldrich, MSPH, Director of the South Carolina Central Cancer Registry.

Report provided by:

SC Central Cancer Registry
Department of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201
Phone: (800) 817-4774 or (803) 898-3696

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Table 1. Analysis of New Cancer Cases in Spartanburg County, 1996-2000

Site	Observed	Expected	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	920	886.31	1.04	1.28
Breast (Female)	880	841.54	1.05	1.76
Prostate	821	906.91	0.91	8.14
Colon/Rectum	615	646.27	0.95	1.51
Bladder	185	220.59	0.84	5.74
Non-Hodgkin Lymphoma	175	183.41	0.95	0.39
Melanoma	166	192.66	0.86	3.69
Oral/Pharynx	140	161.89	0.86	2.96
Uterus	115	137.90	0.83	3.80
Pancreas	112	125.94	0.89	1.54
Kidney/Renal Pelvis	109	142.17	0.77	7.74
Brain/CNS	87	76.53	1.14	1.43
Ovary	83	93.38	0.89	1.15
Leukemia	73	108.37	0.67	11.54
Larynx	70	69.82	1.00	0.00
Stomach	61	88.66	0.69	8.63
Esophagus	59	77.28	0.76	4.33
Cervix	57	78.21	0.73	5.75
Multiple Myeloma	55	63.04	0.87	1.03
Liver	48	39.48	1.22	1.84
Thyroid	46	59.26	0.78	2.97
Hodgkin Disease	30	25.57	1.17	0.77
Soft Tissue	28	30.68	0.91	0.23
Other Female	25	29.34	0.85	0.64
Testis	24	23.33	1.03	0.02
Anus/Anal Canal	20	16.29	1.23	0.84
Small Intestine	18	16.07	1.12	0.23
Other Digestive	14	23.85	0.59	4.07
Gallbladder	12	12.11	0.99	0.00
Ureter	11	6.24	1.76	3.63
Other Respiratory	10	20.15	0.50	5.11
Other Endocrine/Thymus	7	7.10	0.99	0.00
Bone/Joint	6	8.94	0.67	0.97
Penis	5	5.23	0.96	0.01
Eye/Orbit	3	7.81	0.38	2.96
Unknown/III-Defined	161	NA	NA	NA
All Sites	5293	5612.57	0.94	18.20

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cases of cancer expected are not analyzed due to the unreliability of statistical tests based on small numbers. These sites have been removed from this table.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201
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Table 2. Analysis of Cancer Deaths in Spartanburg County, 1998-2002

CancerSite	Observed	Expected	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	845	770.35	1.10	7.23
Colon/Rectum	254	259.04	0.98	0.10
Female Breast	235	195.06	1.20	8.18
Unknown/III-Defined	210	159.34	1.32	16.10
Pancreas	157	144.46	1.09	1.09
Prostate	137	175.08	0.78	8.28
Non-Hodgkins Disease	112	94.76	1.18	3.14
Leukemia	92	91.90	1.00	0.00
Ovary	75	60.49	1.24	3.48
Liver	65	50.05	1.30	4.47
Multiple Myeloma	61	60.36	1.01	0.01
Brain/CNS	59	66.70	0.88	0.89
Stomach	57	66.30	0.86	1.30
Bladder	53	49.15	1.08	0.30
Esophagus	52	64.63	0.80	2.47
Kidney/Renal Pelvis	46	53.67	0.86	1.10
Oral/Pharynx	42	50.25	0.84	1.36
Uterus	29	30.53	0.95	0.08
Cervix	22	26.85	0.82	0.88
Melanoma Of Skin	22	29.95	0.73	2.11
Soft Tissue	14	18.56	0.75	1.12
Other Skin	13	13.70	0.95	0.04
Larynx	12	20.94	0.57	3.82
Thyroid	9	5.23	1.72	2.72
Other Digestive	7	11.37	0.62	1.68
Gallbladder	6	7.90	0.76	0.46
Other Respiratory	3	5.82	0.52	1.37
Other Female	3	6.82	0.44	2.14
Bone/Joints	1	7.56	0.13	5.69
All Sites	2734	2623.49	1.04	4.65

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cancer deaths expected are not analyzed due to the unreliability of statistical tests based on small numbers. These sites have been removed from this table.

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